

mammals and birds. Nevertheless, the use of a method requiring less or more energy was determined by the nutritional value and/or abundance of the prey.

#### A COMPARISON OF NEST SITES OF THE NORTHERN GOSHAWK IN ARIZONA AND CALIFORNIA

HALL, P.A. *Northern Arizona University, School of Forestry, Box 4098, Flagstaff, Arizona 86011*

The northern goshawk is considered an indicator species for old-growth forests in the western United States by a number of state and federal agencies. Studies of the species have evoked a growing concern about the effects of forest management practices on the viability of western population, as evidenced by the recent petition to the U.S. Fish and Wildlife Service to list the species as threatened. Information on goshawk habitat requirements in Arizona is scarce and there is justifiable reticence to apply results from other vegetation zones or physiographic provinces. The object of this analysis is to identify differences and commonalities in the structural and physiognomic characteristics of nest sites in two study areas in different regions; northern Arizona ponderosa pine and northwestern California Douglas-fir. A multivariate analysis-of-variance revealed an overall significant difference between nest sites, nest trees, and nests in the two areas. These differences are based on characteristics attributable to species growth patterns and climate, such as: basal area, stem density, canopy closure, and tree height in the nest sites; nest tree height and diameter; and the position of the nest within the nest tree and nest site canopies. Multistoried canopies prevail in California while single-storied canopy structure is predominant in Arizona. However, all nest sites are park-like due to the absence of a shrubby understory. Nest sites and nest trees are comprised of the locally dominant species. The distributions of tree size classes are similar. Nest tree diameters generally fall in the two largest size classes and classify as old growth on average. There are problems extrapolating results from one study area to another. This comparison begins to identify generalizable characteristics which can be applied to goshawk management on a broader scale.

#### HYBRIDIZATION BETWEEN BARRED AND SPOTTED OWLS

HAMER, T.E. *Washington Department of Wildlife, 600 Capitol Way North, Olympia, WA 98504*. E.D. FORSMAN. *USDA Forest Service, Forestry Sciences Laboratory, Corvallis, OR 97331*. A.D. FUCHS AND M.L. WATERS. *Puget Power and Light Company, Bellevue, WA 98009*

We present the first records of interspecific hybridization between the Northern Barred Owl (*Strix varia varia*) and Northern Spotted Owls (*S. occidentalis caurina*). Two hybrid owls in Washington and two in Oregon were con-

firmed during 1989–92. One of the hybrids paired with a Barred Owl and produced young in 1990 and 1991. In addition, we confirmed the pairing of a female Barred Owl to a one-year-old male Spotted Owl, which produced at least one young in 1992. Hybrids were identified by their unique plumage, unusual vocalizations, and morphological measurements. All three adult hybrids had similar plumage characteristics and vocalizations. Body measurements of hybrids were intermediate between Barred and Spotted Owls, and sonograms of vocalizations displayed attributes of both species. Although genetic comparisons have not yet been conducted, we believe the three adult specimens we observed were all F1 crosses between Barred and Spotted Owls. Hybridization between these species and successful back-crossing by hybrids indicates that the designation of the Barred and Spotted Owl as a super-species is appropriate.

#### A DISASTROUS BREEDING SEASON FOR AMERICAN KESTRELS—1992

HAMERSTROM, F.N. *6789 3rd Ave., Plainfield, WI 54966*

We have monitored 50 American Kestrel (*Falco sparverius*) nest boxes on an approximately 50 000 acre (20 234 ha) study area in central Wisconsin for 25 years (1968–92). The number of young fledged per year had risen since 1968 and then it declined since 1982. The mean number of young fledged 1968–92 was 52. The most strikingly aberrant year was this past season. Only 11 young fledged.

#### PEREGRINE RECOVERY IN THE ROCKY MOUNTAINS AND PACIFIC NORTHWEST

HEINRICH, W.R. *The World Center for Birds of Prey, 5666 West Flying Hawk Lane, Boise, ID 83709*

By the late 1970s no Peregrines were known to be breeding in Montana, Idaho, or Wyoming, and only small remnant populations were known to exist in Colorado, New Mexico, northern Utah, Washington, and Oregon. In 1975, The Peregrine Fund established a breeding facility in Ft. Collins, Colorado, with specific objectives to begin raising and releasing Peregrines in the Rocky Mountains. Since 1978, over 1650 Peregrines have been released in the Rocky Mountains and Pacific Northwest. The program has successfully met recovery objectives in Colorado and Utah. Additionally, since 1980 a total of 830 Peregrines have been released in Montana, Idaho, and Wyoming. In 1992, 40 known pairs produced over 73 young in those states (1.8 young per pair). Over 209 Peregrines have been released in Oregon and Washington since 1980 when only four pairs were known. Today, over 45 pairs are present. The Peregrine Fund, in cooperation with agencies in Montana, Wyoming, Idaho, Washington, and Oregon, plans to continue releasing about 130 Peregrines a year